Preface

Half of the British Mycological Society's membership is from the British Isles, yet many are from countries which are generally considered to be situated in 'the Tropics'. Since the Sixth General Meeting of the Society held in Birmingham in 1988 members have recognized the increasing importance of tropical mycology and Council felt that it would be appropriate to bring both these factors of membership and research interests together for its millennium activities. A symposium was therefore organized in April 2000 to cover as many aspects as possible of the tropical mycobiota. This volume is one of two which result from this millennium symposium held at John Moores University, in Liverpool. In order to broaden the scope and the depth of the subjects covered in this book other chapters not formally presented at the symposium are included. This volume deals with the macrofungi; a sister volume deals with the microfungi.

The British Mycological Society has now organized two meetings specifically on Tropical Mycology and both were held in Liverpool, coincidentally a city with a long history of contacts with the area of the world which lies between 25° north and south of the Equator known to us all as 'the Tropics'. These books will therefore act as a companion to the proceedings of the meeting held in 1992 which was published 1 year later under the title *Aspects of Tropical Mycology*. Thoughts expressed therein have now been consolidated and the chapters included here are a summary of the state of knowledge in their respective fields. Some of the studies have indirect connections to the two expeditions the Society has organized to tropical areas, the first to Ecuador in 1993 and the second to Thailand in 1997.

In the selection of subjects, attempts have been made to bring together papers which offer a wide spectrum of information, linking results from the New

World and data from the Old World tropics. Contributions by 25 researchers cover in 12 chapters every major area of the tropics. Although our knowledge of the tropical mycotas is far from adequate, the surge of interest in the fungi of these areas has expanded our knowledge several-fold since 1992.

In this first volume chapters undoubtedly interlink, but they have been arranged in such a way as to cover the broader issues of ectomycorrhizal and floristic studies (Chapters 1–4), systematics (Chapter 5), lignicolous fungi (Chapters 6 and 7) and their enzymatic activity (Chapter 8), insect–fungal interrelationships (Chapter 9) and conservation and mycophagy (Chapters 10 and 11). The book finishes with a chapter on modern technologies that can be applied to the cultivation of edible fungi, the majority of which originate in the tropics.

It is well appreciated by researchers studying biodiversity that fungi play an important and integral part of any ecosystem and that mycodiversity studies are essential to our understanding of the world's natural heritage. It is therefore appropriate to include an account (Chapter 1) which focuses on the macrofungi of the oakwoods of the Neotropics, an area extremely rich in boletes and agarics but until recently little known mycologically. In Chapter 2 the fungi forming sheathing mycorrhizas in Africa are considered, a group of organisms which until relatively recently were not thought to be widespread in the tropics. The field results in this chapter complement the quantitative work described in Chapter 3, based on South-east Asian rainforest communities and where the analyses indicate that we should look much further in our search for potential ectomycorrhizal hosts. It is appropriate to include in this volume information (Chapter 4) on the ambitious Greater Antilles Project, which has involved so many macromycologists over the last few years and which is now entering an exciting analytical stage. One large group of basidiomycetes in the tropics is the dark-spored agarics, although in some parts of South-east Asia and in Africa genera such as *Cortinarius* and *Inocybe* are either absent or extremely rare. With particular emphasis on *Gymnopilus*, Chapter 5 deals with the dark-spored agarics of Mexico, a rather important centre of diversity of many organisms.

Much discussion in natural history circles has surrounded the presence or absence of a division separating the Australasian fauna and flora into two distinct groups, one to the south and one the north of an imaginary line. Chapter 6 questions whether such a division can be demonstrated for the distribution of bracket fungi or polypores. Chapter 7 explores the biology and ecological parameters of one member of this group of fungi, *Phellinus noxius*, a very important pathogen of the tropics. Tropical fungi, like their temperate counterparts, have a wide array of enzymes to break down organic material, either of standing trees or woody litter, and by doing so release essential nutrients for recycling. Chapter 8 looks at the production of lignolytic enzymes in various assemblages of fungi found in one area of the New World. There is also a complex series of enzymes, chemical messengers and ecological interactions operating in the amazing close relationship between the Neotropical leaf-cutting ants and their fungal associ-

ates. Chapter 9 examines this complex system under laboratory conditions in a way previously not undertaken.

Despite recent advances our knowledge of the world's mycota is still in a very meagre state. Concerning tropical constituents, of which there are undoubtedly a vast number of undescribed species, we sadly lack even fundamental information. Fungus lists and compilations are essential to stimulate the smallest glimmer of interest in fungal conservation and Chapter 10 develops this by trying to identify some of the issues which concern mycologists in India and how these are being tackled. Meanwhile the problems of the identity of those fungi which are being collected as food or medicine in China and East Africa, and the way the indigenous people identify the poisonous specimens, are addressed in Chapter 11. Examination of the development and physiology of tropical mushrooms in both the field and in the laboratory (Chapter 12) will lead to a better understanding, and possibly more efficient exploitation, of these fungi. The general public in Europe are blissfully unaware of the tropical origin of many of the fungi which are now appearing on supermarket shelves. An additional bonus of this book and its sister volume is the vast array of references which accompany each chapter; such references act in themselves as a valuable research tool.

It is hoped that this collection of chapters will stimulate many students of mycology and be helpful to a whole range of biologists interested in tropical biodiversity. It would be outstanding if they could also act as pump-primer to support research programmes and even a demand to launch a third British Mycological Society tropical expedition.

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